IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of the claims in the application:

1. (Cancelled)

2. (Currently Amended) A method of claim [1] 7, wherein the fixed interval is the time between the incoming pulses.

3. (Cancelled)

4. (Previously Presented) A method of claim 1, wherein the incoming pulses are multilevel pulses.

5. (Currently Amended) A method of claim [1] 7, wherein the step of correlating the incoming pulses with the local pulses to produce a correlation function comprises:

shifting a phase of the local pulses; and

calculating a correlation value of the local pulses and the incoming pulses.

6. (Original) A method of claim 5, wherein the correlation value comprises the correlation function.

7. (Currently Amended) A method ~~of claim 1~~ for identifying a phase of an incoming ultra wide bandwidth signal at an ultra wide bandwidth receiver, comprising the steps of:

receiving incoming pulses of the incoming ultra wide bandwidth signal, adjacent pulses of said incoming pulses arriving at a fixed interval;

generating local pulses at the ultra wide bandwidth receiver;

correlating the local pulses with the incoming pulses to produce a correlation function; and

determining a maximum of the correlation function;

wherein the incoming pulses are at least one of bi-phase modulated and quadrature phase modulated,

wherein the step of determining a maximum of the correlation function comprises:

finding a first maximum over a first phase range;

analyzing the correlation function to find a second maximum that exceeds the first maximum; and

searching a region around the second maximum over a second phase range to determine if the second maximum is a true maximum,

wherein the second phase range is narrower than the first phase range.

8. (Cancelled)

9. (Currently Amended) A system of claim [8] 14, wherein the fixed interval is a distance between the incoming pulses in time.

10. (Cancelled)

11. (Currently Amended) A system of claim [8] 14, wherein the incoming pulses are multilevel pulses.

12. (Currently Amended) A system of claim [8] 14, wherein the correlator comprises:

a phase adjuster configured to adjust a phase of the local pulses; and

a calculator configured to calculate a correlation value of the local pulse and the incoming pulse.

13. (Currently Amended) A system of claim 12, wherein ~~a plurality of~~ the correlation value comprises the correlation function.

14. (Currently Amended) A system ~~of claim 8~~ for identifying a phase of an incoming ultra wide bandwidth signal at an ultra wide bandwidth receiver, comprising:

an antenna configured to receive incoming pulses of the ultra wide bandwidth signal, adjacent pulses of said incoming pulses occurring at a fixed interval;

a signal generator configured to generate local pulses;

a correlator configured to correlate the incoming pulses with the local pulses to produce a correlation function; and

a detector configured to determine a maximum of the correlation function,

wherein the incoming pulses are at least one of bi-phase modulated and quadrature phase modulated,

wherein the detector comprises:

a location mechanism configured to find a first ~~peak~~ maximum over a first phase range;

a correlation analysis mechanism configured to analyze the correlation function in order to find a second maximum to exceed the first maximum; and

a search mechanism configured to search an area around the second maximum over a second phase range to determine if the second maximum is the true maximum,

wherein the second phase range is narrower than the first phase range.

15. (Currently Amended) A system for identifying a phase of an incoming ultrawide bandwidth signal at an ultra wide bandwidth receiver, comprising:

means for receiving incoming pulses of the incoming ultra wide bandwidth signal, and adjacent pulses of said incoming pulses arriving at a fixed interval;

means for generating local pulses at the ultra wide bandwidth receiver;

means for correlating the local pulses with the incoming pulses to produce a correlation function; and

means for determining a maximum of the correlation function to determine when correlation is achieved,

wherein the incoming pulses are at least one of bi-phase modulated and quadrature phase modulated,

wherein the means for determining the maximum of the correlation function comprises:

a means for finding a first maximum over a first phase range;

a means for analyzing the correlation function in order to find a second maximum to exceed the first maximum; and

a means for searching an area around the second maximum over a second phase range to determine if the second maximum is the true maximum,

wherein the second phase range is narrower than the first phase range.

16. (Currently Amended) A method of claim [1] 7, wherein the local pulses are generated at the fixed interval, but at a variable phase with respect to the incoming pulses.

17. (Currently Amended) A system of claim [8] 14, wherein the local pulses generated by the signal generator are generated at the fixed interval but at a variable phase with respect to the incoming pulses.